Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An apparatus for controlling cooling of a gantry having at least one linear motor, comprising:

at least one stator comprising a first temperature sensor, a heat sink, and a cooling fan at predetermined portions of the at least one stator;

at least one mover comprising a second temperature sensor[[,]] and a heat sink installed on ~~the~~ an upper surface of the at least one mover;

an encoder configured ~~for sensing~~ to sense at least one of a position and velocity of the at least one mover;

an encoder periphery sensor attached proximate to the encoder and configured ~~for measuring~~ to measure at least one of a surrounding temperature, humidity, ~~and~~ or pressure;

an A/D converter configured ~~for receiving~~ to receive a surrounding environment signal corresponding to at least one of a surrounding temperature, humidity, and pressure from the encoder periphery sensor, a position and velocity signal from the encoder and a first temperature signal and a second temperature signal from the first and second temperature sensors and ~~converting~~ to convert the surrounding environment signal, the position and velocity

signal, and the first and second temperature signals from analog signals to digital signals and ~~outputting~~ output the digital signals;

at least one mover driver configured to provide a drive signal to a coil block attached to the mover;

a controller configured to control ~~for controlling~~ a drive signal ~~outputted~~ output from the at least one mover driver to control the velocity of the at least one linear motor and to receive the digital signals output by the A/D converter and output at least one of a cooling fan control digital signal and an air valve control digital signal; and

a D/A converter configured to receive from the controller and to convert ~~for converting~~ at least one of ~~a~~ the cooling fan control digital signal and the air valve control digital signal to an analog drive signal and output the analog drive signal to at least one of a cooling fan and an air valve.

2. (Previously Presented) The apparatus of claim 1, wherein the encoder comprises an indication member for indicating position information of the at least one mover and an optical sensor for reading the position information.

3. (Currently Amended) The apparatus of claim 1, wherein the at least one mover further comprises a nozzle connected to [[an]] the air valve and configured to cool the at least

one mover, wherein the D/A converter is ~~further~~ configured to receive [[an]] the air valve control digital signal and ~~produce an~~ output the analog drive signal to control the air valve.

4. (Currently Amended) A method for controlling cooling of a gantry having at least one linear motor, comprising :

operating at least one mover and at least one stator of the at least one linear motor;

measuring temperatures of the at least one mover and the at least one stator;

storing the measured temperatures;

comparing the measured temperatures with a pre-set temperature value;

computing a difference between the pre-set temperature value and the measured temperatures if the measured temperatures are greater than the pre-set temperature value;

computing a temperature gain corresponding to the computed temperature difference; ~~and~~

driving at least one of a cooling fan and an air valve as long as the temperature gain is greater than a pre-set gain value; and

controlling movements of the at least one linear motor based on the comparison of the measured temperatures with the pre-set temperature value.

5. (Currently Amended) A method for controlling cooling of a gantry comprising at least one linear motor having a stator and a mover, comprising:

operating the mover in accordance with a movement command;

measuring at least one of a position and a velocity of the mover with an encoder;

making a first measurement of at least one of environmental temperature, humidity, ~~and~~ or pressure;

determining first temperature values of the stator and the mover;

storing the first temperature values;

comparing each of the first measurement of at least one of environmental temperature, humidity, or pressure and the first temperature values with a pre-set value;

computing a ~~temperature~~ difference between each of the first measurement of at least one of environmental temperature, humidity, or pressure and the first temperature values and the pre-set value in the case that at least one of the first measurement of at least one of environmental temperature, humidity, or pressure and the first temperature values is greater than the pre-set value;

computing a temperature gain from the temperature difference;

driving at least one of a cooling fan and an air valve in accordance with the temperature gain;

determining second temperature values of the stator and the mover;

storing the second temperature values;

comparing each of the first measurement of at least one of environmental temperature, humidity, or pressure and the second temperature values with the pre-set value; and

correcting a movement command if at least one of the first measurement of at least one of environmental temperature, humidity, or pressure and the second temperature values is greater than the pre-set value using the measured at least one of a position and a velocity of the mover.

6. (Currently Amended) The method of claim 5, wherein if at least one of the first measurement of at least one of environmental temperature, humidity, or pressure and the second temperature values is less than the pre-set value, then the method returns to measuring at least one of a position and a velocity of the encoder.

7. (Currently Amended) A cooling system for a gantry having a linear motor, comprising:

an x-y gantry;

a linear motor of the gantry comprising a temperature sensor provided for each of the stator and rotor of the linear motor and configured to produce a linear motor temperature signal;

a processor configured to receive the linear motor temperature signal and produce a first control signal in accordance with a difference between a sensed temperature of the linear motor and a prescribed value; ~~and~~

a first cooling device configured to cool the linear motor in accordance with the first control signal; and

a second cooling device configured to cool the linear motor in accordance with a second control signal from the processor, wherein the first cooling device and the second cooling device are different types of devices.

8. (Previously Presented) The cooling system of claim 7, wherein the first cooling device comprises a fan.

9. (Previously Presented) The cooling system of claim 7, wherein the first cooling device comprises a nozzle connected to a valve and configured to supply a flow of cooling air to the linear motor.

10. (Canceled)

11. (Previously Presented) The cooling system of claim 7, wherein the temperature sensor comprises multiple temperature sensors that are positioned on different portions of the linear motor.

12. (Previously Presented) The cooling system of claim 7, wherein the first cooling device is configured to cool a stator of the liner motor.

13. (Previously Presented) The cooling system of claim 7, wherein the first cooling device is configured to cool a mover of the linear motor.

14. (Currently Amended) ~~The cooling system of claim 7, further comprising~~ A cooling system for a gantry having a linear motor, comprising:

an x-y gantry;

a linear motor of the gantry comprising a temperature sensor provided for each of the stator and mover of the linear motor and configured to produce a linear motor temperature signal;

a processor configured to receive the linear motor temperature signal and produce a first control signal in accordance with a difference between a sensed temperature of the linear motor and a prescribed value;

a first cooling device configured to cool the linear motor in accordance with the first control signal; and

a linear motor controller configured to control movements of the linear motor in accordance with a second control signal produced by the processor.

15. (Currently Amended) The cooling system of claim 14, wherein the processor is configured to produce [[a]] the second control signal ~~that~~ which causes the linear motor controller to reduce a speed of a mover of the linear motor when the processor determines that the sensed temperature of the linear motor is above a predetermined temperature.

16. (Currently Amended) ~~The cooling system of claim 7, further comprising~~ A cooling system for a gantry having a linear motor, comprising:

an x-y gantry;

a linear motor of the gantry comprising a temperature sensor provided for each of the stator and mover of the linear motor and configured to produce a linear motor temperature signal;

a processor configured to receive the linear motor temperature signal and produce a first control signal in accordance with a difference between a sensed temperature of the linear motor and a prescribed value;

a first cooling device configured to cool the linear motor in accordance with the first control signal; and

an environment sensor configured to sense at least one of an environmental temperature, pressure or humidity and produce an environment signal in accordance thereto, wherein the processor is further configured to produce the first control signal based on the environment signal.

17. (Previously Presented) A cooling system for a gantry having a linear motor, comprising:

an x-y gantry;

a linear motor of the gantry comprising a temperature sensor configured to produce a linear motor temperature signal, wherein the temperature sensor comprises:

a stator temperature sensor configured to sense a temperature of a stator of the linear motor and to produce a stator temperature signal; and

a mover temperature sensor configured to sense a temperature of a mover of the linear motor and to produce a mover temperature signal;

a processor configured to receive the linear motor temperature signal and produce a cooling control signal and a driver control signal in accordance with a difference between the linear motor temperature signal and a predetermined value;

a cooling device configured to cool the linear motor in accordance with the cooling control signal; and

a motor driver configured to control movements of the linear motor in accordance with the driver control signal.

18. (Previously Presented) The cooling system of claim 17, wherein the motor driver varies a velocity of the linear motor in accordance with the driver control signal.

19. (Previously Presented) The cooling system of claim 17, wherein the processor is configured to receive both the stator temperature signal and the mover temperature signal, and wherein the processor produces the cooling control signal and the driver control signal in accordance with a difference between the stator temperature signal and a first predetermined value and a difference between the mover temperature sensor and a second predetermined value.

20. (Previously Presented) The cooling system of claim 19, wherein the first predetermined value is equal to the second predetermined value.

21. (Previously Presented) The cooling system of claim 19, wherein the cooling device comprises:

a first cooling device configured to cool the stator; and

a second cooling device configured to cool the mover.

22. (Previously Presented) The cooling system of claim 21, wherein the processor is configured to produce a first cooling control signal and a second cooling control signal, wherein the first cooling device is configured to cool the stator in accordance with the first cooling control signal, and wherein the second cooling device is configured to cool the mover in accordance with the second cooling control signal.

23. (Currently Amended) A method of cooling a linear motor of a gantry, comprising:

measuring a temperature of the linear motor of the gantry;

comparing the temperature of the linear motor with a predetermined value; and

activating a cooling device configured to cool the linear motor if the temperature of the linear motor is greater than the predetermined value, wherein the measuring step comprises:

measuring a temperature of a stator of the linear motor; ~~and~~

measuring a temperature of a mover of the linear motor; and

measuring at least one of environmental temperature, pressure and humidity, and wherein the activating step is also performed based on the measured at least one environmental temperature, pressure or humidity.

24. (Previously Presented) The method of claim 23, wherein the activating step comprises activating at least one of a fan and a nozzle configured to deliver cooling air to the linear motor.

25. (Canceled)

26. (Canceled)

27. (Currently Amended) ~~The method of claim 26,~~ A method of cooling a linear motor of a gantry, comprising:

measuring a temperature of the linear motor of the gantry;

comparing the temperature of the linear motor with a predetermined value; and

activating a cooling device configured to cool the linear motor if the temperature of the linear motor is greater than the predetermined value, wherein the measuring step comprises:

measuring a temperature of a stator of the linear motor; and

measuring a temperature of a mover of the linear motor; wherein the activating step comprises:

activating a first cooling device configured to cool the stator of the linear motor if the temperature of the stator is greater than the predetermined value; and

activating a second cooling device configured to cool the mover of the linear motor if the temperature of the mover is greater than the predetermined value.

28. (Currently Amended) ~~The method of claim 23, further comprising~~ A method of cooling a linear motor of a gantry, comprising:

measuring a temperature of the linear motor of the gantry;

comparing the temperature of the linear motor with a predetermined value; and

activating a cooling device configured to cool the linear motor if the temperature of the linear motor is greater than the predetermined value, wherein the measuring step comprises:

measuring a temperature of a stator of the linear motor;

measuring a temperature of a mover of the linear motor; and

reducing an operating speed of the linear motor if the temperature of the linear motor is greater than the predetermined value.